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ABSTRACT

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EFFICACY AND ACHIEVEMENT:

SELF-MANAGEMENT AND SELF-REGARD

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Abstract

The paper provides a review of research on the interrelationship of classroom management practices, motivational factors associated with the disposition to learn, and basic skills achievement. The underlying intent of this paper is to examine evidence relating to a potential conflict between a traditional-practices approach to basic skills instruction and "permissiveness" as defined by self-regulated learning and the promotion of a sense of personal effectiveness. Research and theory presented include reference to such topics as self-control, self-management practices, attribution theory, achievement-motivation training, and continuing motivation.

I. INTRODUCTION

This paper is intended to provide a review of research on the interrelationship of student self-management behaviors, academic motivation, and basic skills achievement. The paper will examine evidence relating to a potential conflict between the methods implicated in the "back-to-basics" movement and some of the methods and goals associated with the disposition to learn.

The back-to-basics movement is more than a switch from varied curricular offerings to a concentration on reading and mathematics. Stated simply, the movement has come to reflect a return to traditional practices that pervades not only what is offered in schools but how it is offered. This resurrected view of proper school practices has at least the following attributes: the role of the student is to pay attention and follow directions, the role of the teacher is to effect a controlled structured environment within which direct instruction (e.g., drill and practice) is the dominant activity, and the principal outcomes of interest are the skills and items of knowledge that comprise the subject matter.

The pairing of "traditional practices" with a concern for "basic skills" occurred, in part, because of a general dissatisfaction with the innovative programs and methods popularized in the 1960s. Teachers, administrators, and parents were startled by declining test scores, uneducated high school graduates, disruptive classrooms, and ill-disciplined students. They blamed the "new permissiveness" embodied in

many of the school's practices and longed to see a return to the time of their youth when discipline and learning were the orders of the day.

The back-to-basics movement, as depicted in this somewhat over-simplified analysis, could easily be dismissed as nostalgic and reactionary. But recent research results seem to make it apparent that the movement is anything but naive. Data from a number of independent and large-scale studies of teacher effectiveness seem to confirm the popular notion that structure, control, and direct instruction tend to be associated with gains in student achievement. Specifically, classrooms that are characterized by strong teacher control, structure, convergence on learning activities, less pupil freedom, less exploration of ideas, and less experimental teaching activities tend to be associated with the greatest pupil gains in basic skills achievement (Evertson & Brophy, 1973; Medley, 1977; Soar, 1972; Soar & Soar, 1976). Across these studies and others, the most dominant correlate of achievement appears to be the extent to which a teacher or an instructional program insures maximum student time-on-task (Harnischfeger & Wiley, 1976; McDonald, 1976; McDonald & Elias, 1976; Medley, 1977; Stallings & Kaskowitz, 1974). Ineffective teachers appear to be so because they prescribe, allow, or indulge in activities which interfere with academically engaged time, e.g., independent study, small group work, over-management, and class disruptions.

Additional supportive evidence for the importance of structure control, and "time-on-task" comes from experimental comparisons of

alternative Follow Through models (Abt Associates, 1976, 1977; Karnes, Teska, & Hodgins, 1970). According to these studies, not only are highly structured, teacher-directed, time-intensive programs associated with significant and dramatic gains in student achievement, but it also appears that the more structured the program, the larger the achievement gains, with unstructured, permissive programs, such as the Open Education model, showing little or no gains (Bereiter, 1978). Far and away the most successful of the follow through models, the University of Oregon's Direct Instruction Model, has produced median percentile scores on the Metropolitan Achievement Test ranging from 41 to 51, compared to the average range of scores for competitive models of 16 to 28 (Becker, 1977).

The force and implications of these studies cannot easily be discounted. To be sure, it is likely that the relevance of highly structured classrooms, drill-and-practice techniques, and teacher control will vary according to the age and socioeconomic status of the student as well as to the nature of the outcome variables of interest (Soar & Soar, 1976). Nevertheless, these results may serve to brand many of the popular innovations of the sixties as expensive mistakes. Potentially included in this category are such programs and practices as: Open Education, alternative schools, discovery learning, affective education, grouping, and individualized instruction. To the extent that the permissiveness and lack of structure and control inherent in these programs and practices detracted from

time spent on learning activities, their disappearance should not be viewed as a loss; however, a wholesale return to more traditional practices may further exacerbate a side effect of schooling that is already debilitating for many students.

This side effect can be seen in a well-known trend. Most students come to school, at least in the early grades, eager to learn and respectful of their elders. Managing a kindergarten class is easy; teaching the class is rewarding. Students regard the experience as a very special one and are quite willing to pursue what they learn in school in their out-of-school time. Descriptions of typical kindergarten children include such labels are curious, creative, persistent, enthusiastic, and self-reliant.

But as schooling progresses, something happens to change this idyllic picture. By the time students have reached the late elementary years, they are no longer as curious or creative or as willing to persist on school-like tasks (Resnick & Robinson, 1975). Revised descriptions of the same class of children described above might include such labels as sullen, withdrawn, disruptive, and under-achieving. By the late elementary years, some 50-60 percent of teachers' in-class statements are for the purpose of controlling the class: explaining rules, limiting movement, starting and stopping activities, giving orders, and reprimanding behavior (Firestone, 1977).

The sources of this trend are not immediately apparent. There does not seem to be anything progressively noxious about the demands of

schooling; nor is there anything inherent in the growth of children or in the difference between early and late elementary grade teachers to explain these changes. One hypothesis (Covington and Beery, 1976) is that schools become a progressively unrewarding experience for a significant percentage of students because the achievement and reward structure of schools pose a threat to students' self-worth. "The individual's sense of worth is threatened by the belief that his value as a person depends on his ability to achieve and that if he is incapable of succeeding, he will not be worthy of love and approval" (p. 6). The resultant breakdown in commitment and in self-regulated learning according to Covington and Beery (as well as Firestone, 1977) relates to the all-consuming atmosphere of personal evaluation in schools, the excessive reliance on extrinsic rewards, the determination of success and failure by achievement rather than effort, and the fact that standards of success and failure are set by someone other than the student himself.

This system, in which performance is exchanged for grades (Doyle, 1978), is seemingly satisfactory for some high-ability students. They thrive on the praise and adulation associated with correct responding and high grades. They are docile and compliant compared to their peers, and they seem to find school a rewarding place to be. Yet many of these high-achievers learn shortcuts to achievement rewards and learn to regard out-of-class learning as unrewarding, two very dysfunctional instructional outcomes. Those students who are con-

fronted with a disproportionate number of failure experiences in comparison to their peers, as well as many of the students in the middle ground of the performance-grade contest, are forced to save their self-esteem through a variety of failure-avoiding strategies, such as false effort, low- or high-goal setting and academic cheating, or through gaining the admiration of their peers by means of acting out in class (Covington & Beery, 1976).

From the teacher's perspective, the management of the instructional process increasingly becomes a matter of trying to reinforce appropriate behavior and curb inappropriate behavior. The management problem is further exacerbated by the fact that neither praise nor reprimands work for all students. As Covington and Beery point out, praising a student for trying is often ineffective so long as the student knows that achievement and not effort is the important standard. With regard to reprimands, a study by Kounin (1970) is relevant. In classrooms of students characterized as low on a motivation scale, teacher reprimands for inappropriate behaviors tended to be followed by an increase in deviancy and a decrease in attention, instead of the other way around. Moreover, Kounin concluded that such desirable teacher attributes as creating rapport, holding students' interest, and being understanding and patient will not manage a classroom any better than firm discipline.

The back to basics movement then may impede the attainment of such universally touted educational objectives as: a positive self-image

or self-concept, a sense of personal effectiveness or agency, a will to learn, the disposition and ability to manage one's learning, and the disposition to pursue learning activities autonomously. The argument to be presented in this paper is that, whereas such goals may be incompatible with traditional practices as defined by such attributes as teacher control, teacher management, and external rewards, they are wholly compatible with the essential purpose behind the employment of traditional practices--insuring academically engaged time and fostering academic achievement. Furthermore, it will be argued that not only are a sense of personal effectiveness and competence of equal importance as instructional outcomes, but that instructional strategies designed to enhance efficacy tend also to enhance achievement and achievement-related behaviors.

To examine these assertions, this paper will review research on student motivational characteristics and self-management strategies as they relate to basic skills instruction. The paper is a companion to a review of student learning characteristics that relate to individual differences in reading and mathematics (Thomas, 1978). The former paper emphasized characteristics of students that relate to and interact with learning tasks and instructional conditions; the present paper focuses on characteristics that relate to classroom management practices.

This focus is twofold: (1) to review the research on the management of students' on-task behavior and the relationship of various

management procedures to academic achievement; and (2) to provide a picture of the dynamics of the relationship between students' motivational characteristics and achievement with an accompanying review of research on the interrelationship of achievement, motivation and classroom management practices. Both focuses have a common theme: to investigate what research has to say about the value and viability of making students be and feel responsible for their own learning. Furthermore, this research will be used to evaluate the assertion that an environment which is "properly permissive"--one that provides students with a sense of agency and self-worth--can be made compatible with a task-oriented "traditional practices" environment. In other words, is it possible to design a system wherein confidence and competence can grow together?

II. THE MANAGEMENT OF ON-TASK BEHAVIOR

Behavior Modification Procedures

Principles of behavior modification have long been used successfully to reduce inappropriate behavior in individual students (Kanfer, 1975; Richards, 1977). The use of behavior modification techniques in a classroom setting has been reasonably successful as well. The majority of these studies have concentrated on the reduction of disruptive behavior: out-of-seat behavior, conduct problems, talking-out, and aggression (Walker & Hops, 1976).

Hops and Cobb (1973), however, point out that just as there are class-

room behaviors that serve to get in the way of academic achievement, there are other appropriate behaviors that serve as prerequisites to effective academic functioning. Previous research by Cobb revealed that the behaviors of attending and volunteering, and minimal looking-around behavior seemed to be important prerequisites to learning to read. In mathematics, attending, compliance, and minimal looking-around behavior seemed to be instrumental for taking advantage of learning opportunities in the classroom. A study by Cobb and Hops (1973) involved the implementation of a teacher-training program using experimenter instruction, cueing, modeling, feedback, and praise. Subsequent to this training, teachers trained their students using the techniques taught by the experimenters. This child-training program included: (1) the pairing of social and nonsocial reinforcers in order to enhance the power of social reinforcement when used alone; (2) vicarious reinforcement which involved praising other children's appropriate behavior instead of publicly showing disapproval of a child's inappropriate behavior (this technique was designed both to increase appropriate behavior in non-task-oriented children and to provide more frequent opportunities to dispense praise to all children); (3) shaping procedures continually to adjust the criteria for reinforcement upwardly; and (4) fading out of nonsocial reinforcers.

The method for the study involved selecting eighteen first graders from three classrooms who were observed to exhibit the lowest rates of attending and volunteering behavior and a high incidence of

looking-around behavior. These behaviors are referred to by Cobb and his associates as "survival skills." The eighteen students were randomly assigned to two experimental classes and one control. Following the intervention period, the experimental students were observed to produce a significantly greater proportion of survival skills. The mean percentage of survival skills increased 24 percent between baseline observations and post-intervention observations, compared to a 3 percent increase for control subjects. In follow-up observations conducted 4-6 weeks after the intervention period, experimental students showed an additional increase over the gains made during intervention, while the controls showed a 16 percent decrement. Moreover, a similar pattern of gains was found for a standardized test of reading achievement.

Two follow-up studies (Hops & Cobb, 1974; Walker & Hops, 1976) provide partial replications of the Cobb and Hops finding (1973). Hops and Cobb (1974) hypothesized that although students who receive intensive, direct instruction in reading skills would increase their academic achievement but not their survival skills, students who receive training in academic survival skills would increase their skill levels in both areas; that is, in academic achievement as well as in survival skills performance. The results confirmed the hypothesis. Both groups showed equivalent achievement gains, but only the survival skills group showed an increase in the proportion of survival skills employed during learning. The Walker and Hops study compared survival skills

training to one treatment in which reinforcement was contingent on correct academic responding and to a second treatment which combined survival skills training with reinforcement contingent on correct responding. Compared to a control group, which received no special treatment, all three groups showed significant gains in both survival skills and academic achievement (reading and mathematics).

It is unfortunate that no follow-up observations or achievement scores were reported for these latter two studies. Such a follow-up would have revealed whether the effects of survival skill training persisted and affected subsequent achievement, as in the Cobb and Hops study (1973). Furthermore, it is crucial to know whether or not survival skill training transfers to other subjects and to other classrooms (different teachers). Although these investigators (e.g., Hops & Cobb) stress the value of teaching task-related behaviors (e.g., survival skills) in contrast to the training of skills that are more extrinsic to learning (e.g., perceptual motor training), they fail to provide the data on persistence and transfer necessary to warrant their judgment.

A study that is notable not only because of its success but because of the comprehensive nature of the treatment was conducted by Cohen and Filipczak (1971) with institutionalized male delinquents. A new curriculum was designed for the boys which included individualized, self-paced programmed material. Reinforcement in the form of money-equivalent points was made contingent on a variety of appropriate academic and social behaviors. In addition, procedures included

group reinforcement and bonuses for exemplary behavior; the design was an attempt to model contingencies that operate in the outside world. Among the results of the program were mean achievement gains of 2.0 grade levels per year and a mean IQ gain of 12.5 points for 24 of the 36 students for whom pretest scores were available. All students but one showed a gain in IQ; one student gained 27 points.

It has been hypothesized that behavior modification tecniques may be especially appropriate for disadvantaged children. According to this hypothesis, the childrearing practices characteristic of middle-class homes instill the restraint and self-discipline necessary to attend to and take part in learning activities in a productive fashion (Zigler, 1970). Whether due to childrearing practices or other factors, children from lower socioeconomic status homes place little value on self-control (Fagen, Long, & Stevens, 1975) and are more aggressive and less restrained (Zigler, 1970). Hamblin and Hamblin (1972) assessed the independent and combined effects of a token reinforcement system and peer-tutoring on inner-city preschool children. Both peer tutoring and the use of tokens contingent on successful performance in learning sessions improved the rate of reading skills acquisition in a self-paced instructional program. The effects of the two techniques were additive.

The use of behavior control procedures to shape appropriate learning and management behaviors seems to be an effective instructional strategy for students with problems in these areas. Its principal

disadvantage, even when these procedures are used to foster academic skills, is that the instructional effects may not transfer to new situations. It seems reasonable to assert that as long as the locus of control is tied to people and procedures that are external to the learner, there is no reason to expect such transfer to occur.

Self-Control

Although the terms self-management and self-control are often used interchangeably, they differ in some important respects. Self-control typically refers to the application of principles of behavior modification in situations where an individual uses specific procedures to maintain a behavior that has already come under the control of systematic reinforcement procedures. Self-management may or may not involve systematic behavioral control procedures and is typically used to describe attempts to train students to exhibit complex, multifaceted behavior such as goal setting, planning, and studying. Both procedures involve the transfer to students of responsibilities typically held by the teacher.

Glynn, Thomas, and Shee (1973) have identified four behavioral components of self-control which have been investigated by a number of other researchers. These components are: (1) self-assessment--an individual must examine his own performance and decide whether he/she has exhibited the specific behavior; (2) self-recording--recording the frequency of the given behavior or class of behaviors; (3) self-

determination of reinforcement--the individual determines the nature and amount of reinforcement from an array of reinforcers; and (4) self-administration of reinforcement. Studies of self-control involve at least one of these four behavioral components, the first two of which are often referred to as "self-monitoring."

Interest in classroom research on self-control on the part of researchers trained in the principles of behavior modification has a number of bases: (1) attempts to control behavior in a clinical setting using self-control techniques has been reasonably successful; (2) the use of external control techniques on a group of individuals is expensive and logistically difficult (McLaughlin, 1976); (3) many of the behaviors that are candidates for control in a learning situation are covert rather than overt, and it is thus easier for the individual student to identify their occurrence than it is for a teacher or observer; and (4) a number of investigators see self-control techniques as having the potential for freeing students from a dependence on external reinforcement, for providing more academic choices, and for fostering a sense of agency over the learning process. Fagen, Long, and Stevens (1975) define self-control as one's capacity to direct and regulate personal action flexibly and realistically in a given situation.

Self-control procedures are viewed as having value as both an instructional means and an instructional end. These procedures are represented as an efficient way to shape academic responses as well

as to provide students with a feeling of control over their behavior. The importance of this latter outcome, at least for disadvantaged students, is highlighted in many of the studies reported in this section with reference to the finding by Coleman et al. (1966). Coleman et al. found that a student's sense of control over the environment was the best single predictor of academic achievement among blacks.

It is likely that for feelings of self-control to be maintained, self-control training must result in increased competence in learning situations independent from the training situation. Dansereau, Actkinson, Long, and McDonald (1974) view self-control as one among a number of learning strategies whose value lies in their transferability to varieties of situations. It is the transfer value of these strategies that gives students real control over their learning. ("Give a man a fish and you feed him for a day, teach a man how to fish and you feed him for a lifetime.") Related to the transferability of self-control strategies is the possibility alluded to by McLaughlin (1976a) that behaviors maintained through self-control procedures may be more resistant to extinction than behaviors achieved through externally regulated systems.

Glynn, Thomas, and Shee (1973) used behavioral self-control procedures with second-grade children. Following a baseline period during which the incidence of off-task behavior was observed, a class contingency period was introduced during which the entire class was reinforced with an experimenter-induced signal if and only if no

instance of off-task behavior was observed during a 5-second interval. These intervals were determined in advance and were spread out over the class period. Free-time privileges as well as back-up reinforcers were used to reward the total class for intervals within which no off-task behavior was observed. At the end of four class contingency periods and an additional baseline period, two self-control periods were initiated within which students conducted the four components of self-control (self-assessment, self-recording, self-determination of reinforcement, and self-administration of reinforcement) on their own. The results of the study showed a definite increase in level of on-task behavior over baseline levels during all treatment phases, with a significant increase between the second and third baseline phase as well. A slight increase for the self-control phases over the class-contingency phases was observed. In addition, a reduction in variability evident in the self-control period compared to other periods led to a conclusion that self-control procedures may produce more stable rates of response than do external reinforcement procedures.

McLaughlin (1976a), in his review of self-control in the classroom, cites a study by Parks, Fine, and Hopkins (1974) which compared a teacher-controlled token program and a pupil-controlled token system with first-grade children. In both programs, reinforcement was made contingent on correct responding to mathematics problems across a wide range of difficulty. Both programs were effective in

increasing the mean number of correct problems above performance in a baseline period. Moreover, in the original study as well as in two replications, the pupil-managed system was significantly more effective than the teacher-managed system. This conclusion is supported by Brown (1975), but the more common result in research studies seems to be equivalence in effectiveness (McLaughlin, 1976a, 1976b).

McLaughlin notes that in a number of studies there is a tendency for students in the self-control condition to lower their standards for receiving reinforcement. He describes the task for future research as one of determining how children can be taught to maintain high standards and work hard without the requirement of external reinforcers and constant monitoring. An additional need for future research recognized by McLaughlin (1975, 1976a) is to assess the degree to which self-control techniques generalize to new settings.

To use self-control procedures effectively on complex behaviors involving the operation of a number of skills over time, it may be necessary to teach skills of goal setting and planning as an adjunct to self-control training. Greiner and Karoly (1976), in a study with adult subjects, found that a condition which included training in planning, in addition to self-control instruction and training in study skills, significantly out-performed five other conditions on the majority of the cognitive and study-skills measures administered. The investigators concluded that a self-control program is most

effective when students can systematically evaluate their progress relative to a preset procedure for attaining an ultimate goal. In contrast to this study, Van Zoost and Jackson (1974) found that self-control procedures, when combined with study-skills training, failed to produce a significant difference on a survey of study habits and attitudes compared to study-skills training alone. No achievement or performance measures were used in this study, however.

Not only is it likely that effective self-control procedures will vary according to the demand of the goal in question, but they may also vary according to differences between students as well. Performance contracts are one method for accommodating individual differences in the self-control system. According to Kanfer (1975) contracts are used to help the student initiate specific actions toward a goal, to establish clear-cut criteria for achievement, and to provide a mechanism for clarifying the consequences of engaging in specific behaviors.

As Richardson (1978) points out, contracts can become a part of a self-control or overall self-management system. There is some need for external support, but contracts can be self-initiated within the context of any academic course. Richardson lists nine steps in a hypothetical training model of this sort: (1) make explicit the decision to learn; (2) set specific goals; (3) make a contract; (4) conduct a self-assessment of skills and need for preparation in relation to each goal; (5) take part in needed training; (6) administer course content;

(7) conduct self-monitoring; (8) maintain ongoing self-evaluation and self-correction; and (9) administer terminal self-assessment and self-evaluation.

Self-Management

As mentioned previously, self-management is the phrase sometimes used to denote student control over the goal setting, guidance, and practice aspects of the learning process in contrast to control over one or two features of the process, such as reinforcement. Two independent studies by Harris and Trujillo (1975) and Jacobson and Thompson (1976) represent attempts to combine student control procedures with explicit instruction in principles of learning. The notion in the two studies is both to make students aware of their own behavior and to train them to be apprentice teachers.

In the Harris and Trujillo study, low-achieving junior high school students were given a ten-lesson course which dealt with such issues as awareness of one's own behavior, reasons for studying, principles of stimulus control, reinforcement and the Premack principle (high probability responses can be used to reinforce low probability responses), the use of punishment, note-taking, applications to specific subject matter, examination skills, maintenance of good study habits, and various components of the SQ3R study method (Robinson, 1970). Although the self-management group that took this ten-lesson course failed to outperform a group discussion condition, both groups significantly

outperformed an uninstructed control condition in academic grade-point average computed on the basis of grades in four academic courses during the last six weeks of the semester.

Jacobson and Thompson report a preliminary study in which fourth and fifth-grade students were given a set of systematic rules for managing their instructional progress on a multiplication unit of the Individually Prescribed Instruction (IPI) program. The investigators reported that students could follow the instructional strategy on their own in an effective fashion with a resultant acquisition and retention rate as high or perhaps higher than that of a teacher-controlled unit. Jacobson and Thompson outline a four-stage process in the "apprenticeship of self-teachers." In the end, students would become journeymen teachers who are able to make self-diagnoses, implement changes, and evaluate the results across a variety of instructional goals.

The importance and relative advantages of having children take on the responsibility for managing their school learning is further supported in preliminary research with the Self-Schedule System at the University of Pittsburgh's Learning Research and Development Center (Wang, 1976; Wang & Stiles, 1975; Wang & Stiles, 1976). Wang (1976) lists five assumptions that went into the design of the Self-Schedule System:

1. To provide educational exercises adaptive to learning needs, interests, competencies, and rates, alternative learning environments must be made available;
2. To develop competence in self-directed learning, the student must

be given opportunities to develop skills in making choices among learning alternatives, making plans, scheduling activites, and increasing the management of learning independently;

3. One way to increase teacher time for instructional purposes is to transfer most of the teacher-management duties to students;

4. Flexibility requires preplanning and a certain degree of structure;

5. Explicit statements about expected teacher and student roles and their classroom behaviors will not only increase efficiency, adaptability, and flexibility within the implementation of the program, but will increase the instruction-learning process.

A pilot study of the Self-Schedule System as an alteration of an ongoing individualized instructional program revealed that students as young as four years old could learn to function and increase their rate of task completion using the self-directed learning environment. Similar results were found for grade-one students. Wang and Stiles (1976) report that students in the experimental condition spent less time in prescriptive activities yet completed more prescriptive tasks. They wasted less time, had fewer disagreements, and exhibited more on-task behavior than control students. In addition, teachers engaged in significantly more individual instruction in the student-directed, as compared to the control, condition.

In the pilot study conducted on second grade students, a trend analysis concerned with the mean rate of task completion was conducted across four periods: B2, E1,B2, E2. The "B" periods refer to the Block Schedule System, that is, a traditional teacher-imposed schedule; the "E" periods refer to the intervention of the Self-Schedule System. The mean rate of task completion for the four periods

was 54.86, 64.57, 51.62, and 73.52 respectively. An analysis of the trend effect for periods revealed that not only was the mean rate of task completion significantly higher during the "E" conditions, but there was a significant increase from one "E" condition to another that was not detected from one "B" condition to the next. Moreover, the data also revealed a significant correlation between task completion rates and scores on a measure of self-responsibility for school learning (SRIS). Significant experimental-control differences were found on task-completion rates, as well as on SRIS scores.

Research on student-control and student-management of learning is in its infancy. A great deal of further research is required in order to assess the effects of these procedures across varieties of learning tasks and student populations. According to Campbell (1964), self-direction strategies should be especially effective in subject matter areas where problem solving or reasoning is the principal objective and where students are called upon to learn new ideas. Preliminary support for this position was provided in a pilot study by Campbell and Chapman (1967). The converse of Chapman's position seems to be that learner-control procedures would be least effective for subject matter areas that require large doses of rote learning and drill and practice. Although no test of this hypothesis has been conducted, it is consistent with both common sense and the results of the Direct Instruction Follow Through Model (Becker, 1977). The revised question might be not which technique is best, but when is it optimal to switch

from teacher-control to learner-control, and how might this switch occur at different times according to student characteristic and skill-area differences?

Self-Talk

Self-talk is an instructional strategy that involves having students provide their own direction and guidance for a particular performance through the use of covert or overt statements. Although self-talk can be considered to be an adjunct to self-control or self-management training, it deserves a separate section insofar as the strategy can be applied to any performance that a student is called upon to learn or perform. As Richardson (1978) points out, the self-talk strategy can be considered to be a coping strategy similar to anxiety-reduction or habit-curbing strategies taught in a clinical context. Self-talk, whether it is used to aid in the control of disruptive behavior or to facilitate performance on a problem-solving task, involves the active self-regulation of cognitive processes. This regulatory function can be addressed to the demands of the task, or to the incidental features which be coped with before the task can be attended to, or to both.

Meichenbaum and Goodman (1969) found that impulsive children were less able to direct their motor behavior verbally than were reflective children, especially when instructed to do so in a covert fashion. Reflectivity-impulsivity is a cognitive style dimension identified by Kagan (1965). Students are classified as impulsive or

reflective according to their average response time on the Matching Familiar Figures test (MFF). A subsequent study by Meichenbaum and Goodman (1971) revealed that instruction in self-talk, referred to as cognitive self-guidance training, resulted in significant IQ gains as well as a significant increase in mean decision time (decreased impulsivity) on the MFF test as compared to two control groups. In a four-week follow-up assessment, these same second graders maintained their improved performance relative to controls. The training program employed in this study had as its goals: (1) to train impulsive children to provide themselves with internal self-instructions; (2) to strengthen the mediating properties of children's inner speech; (3) to overcome any possible comprehension, production, or mediational deficiencies associated with inner speech; and (4) to encourage children to self-reinforce their behavior appropriately.

Meichenbaum (1975) suggests that any teacher can identify and teach appropriate self-talk strategies to students, and this process is conceptually similar to task analysis methods. In order to discover the strategies and self-statements that might facilitate performance on a given task, teachers might analyze what they do to perform the task and convert those steps into overt statements. As students become proficient at using the overt statements to perform the task, the use of self-talk could be gradually converted into covert statements. According to Meichenbaum, too often in instruction a mastery model is employed when what is required for initial task

success is a coping model, which addresses some of the prerequisite behaviors that are necessary before learning and mastery can occur (cf. Hops & Cobb, 1973). It should be noted that the Direct Instruction Model mentioned above makes extensive use of self-talk strategies by converting a variety of covert thinking operations into overt self-statements.

Research on learning and self-management strategies cannot be traced back much before 1965, yet the area has potential for becoming a very important adjunct of instructional psychology. Some researchers have concluded that learning strategies may be a more fundamental determinant of academic success than abilities (see Dansereau, et al., 1974).

One variant of research on strategies is sometimes referred to as performance analysis research. Good and poor learners are compared with respect to the strategies they employ during a learning or problem-solving task. The emerging picture seems to be that the best definition of proficiency is one that attributes learners' success to their possession of a repertoire of learning strategies and their disposition to use these strategies in appropriate situations. Describing learning deficiencies in terms of strategy employment implies that instructing poor learners in the use of strategies discovered and used by proficient learners will reduce individual differences in performance. Recent research in reading comprehension provides preliminary support for this notion (see Thomas, 1978).

Self-management strategies appear to be functionally similar to strategies that facilitate performance on learning tasks. Both classes of strategies consist of learned strategies that are most useful in situations where some freedom of choice is provided, e.g., learning to divide fractions vs. learning the times tables, or learning to study vs. learning to follow directions. The major difference between the two areas has to do with the paucity of opportunities for the employment of self-management strategies. Whereas there is a large number of non-rote learning tasks that provide an opportunity for instruction and practice in learning strategies, the prevalence of teacher-management practices in classrooms leaves few opportunities for students to learn and practice self-management behaviors. Some students discover and employ these strategies on occasional out-of-class assignments despite the absence of explicit instruction and environmental support. Others, perhaps the majority of students, never discover them, never learn them, and never appreciate their value.

III. MOTIVATION AND ACHIEVEMENT

General Issues

What is the nature of the relationship between motivational factors and achievement as measured by standardized tests? One way of approaching an answer to this question is to use a predictive model. A battery of cognitive and affective measures can be used in order to account for as much of the variance as possible on the

criterion test. For example, Neale (1969) reports that attitude, personality, and ability each account for about 25 percent of the variance in mathematics achievement. Cattell, Barton, and Dielman (1972) found that personality, ability, and a motivational variable each accounted for 20-25 percent of the variance in school achievement. Among the possible inferences that can be made from employing a predictive model as these studies do is to say that each variable makes an independent and direct contribution to performance on achievement tests. That is, if a measure of students' motivation accounts for 25 percent of the variance in reading achievement, that means that some students did particularly well, in part because they were motivated to do so, while others did poorly, in part because they lacked the requisite motivation. A further inference that is often made is that, if special attention is paid to those students who scored low on the achievement measure, there is reason to believe that their achievement test scores will go up in the future.

A study by Zigler and Butterfield (1968) represents a prime example of this view that motivation makes a direct, independent causal contribution to achievement. Zigler and Butterfield hypothesized that standard testing procedures tend to yield an underestimate of the IQ scores of culturally deprived nursery-school children. They hypothesized that testing for IQ under conditions that optimize motivational factors should significantly raise a child's IQ score. Further, they hypothesized that gains in IQ typically associated with nursery-school instruction

are better explained by motivational factors than by changes in students' cognitive processes. To test these hypotheses, they compared the difference between IQ scores under standard and optimal conditions at the beginning and again at the end of nursery school for nursery and non-nursery children. The study confirmed their hypotheses. For example, although there was no increase in IQ from the beginning of the year to the end for any group tested under optimal conditions, the IQ scores under the standard condition increased, but only for the students enrolled in nursery school.

Another interpretation of the relationship between motivational factors and academic achievement views motivation as having an indirect effect on achievement test performance. Motivational factors determine how students respond to classroom practices and how much they benefit from instruction. It is not that they perform poorly on tests of academic achievement because they are poorly motivated; they perform as well as can be expected considering how little they benefited from classroom instruction, and it is this amount of benefit that motivation affects directly.

Consistent with this perspective on the role of motivation, Kohn and Rosman (1973) defined a two-factor model of children's socioemotional functioning in a preschool setting. Factor I was defined as interest-participation vs. apathy-withdrawal. Factor II is labeled cooperation-compliance vs. anger-defiance. Kohn and Rosman found that Factor I is especially important in that it is present prior to the onset of formal

education and is predictive of subsequent achievement. Kohn and Rosman (1974) found that the socioemotional functioning of kindergarten children, and especially their position on Factor I, accounted for 16-22 percent of the variance in second grade academic achievement. Their interpretation was that children who score high on interest-participation learn more because of their self-confidence and assertiveness. These children are more alert and more likely to engage in active thought processes. As a consequence of seeing motivation to be both person-specific and situation-specific, Kohn and Rosman recommend two types of intervention strategies: a therapeutic approach, which is designed to facilitate interest and participation on the part of learners, and an environmental approach designed to provide appropriate pay-offs for increased student participation.

Finally, there is a third interpretation of the relationship between motivation and achievement. Although none of the views is inconsistent with any other, this third view seems to provide the most useful information regarding the causes of debilitating motivational states as well as possible approaches to alleviating the problem. This third view stems from an explanatory model which holds that school-relevant personality characteristics result from patterns of academic achievement. According to the model, motivational characteristics may well affect test performance both directly and indirectly. But, in addition, motivational characteristics as well as self-concept and self-esteem are themselves shaped by a student's history of success and

failure in and out of school.

Using this model, Kifer (1975) studied students selected from grades 2, 4, 6, and 8. In the second grade sample, half of the students were drawn from the top 20 percent of the achievement distribution and the other half were drawn from the botton 20 percent. A quasi-longitudinal design was employed which involved selecting students from subsequent grades if they had been in the top or the bottom 20 percent of their class each year of school attendance (proxies for the second graders). The dependent variables in the study consisted of a measure of self-esteem, a measure of self-concept of ability, and a measure of Intellectual Achievement Reponsibility (IAR). Kifer hypothesized that the observed characteristics for successful and unsuccessful students would become increasingly divergent from second to eigth grade.

With regard to self-concept, the predicted pattern emerged due primarily to the continual drop off in self-concept on the part of the unsuccessful students. A similar pattern was found for the IAR scale due primarily to a steady increase on the part of the successful students. For self-esteem, the pattern was less uniform but held reasonably well to expectations. Kifer's conclusion was that achievement in the school setting is an antecedent to these, and perhaps other, personality characteristics. A similar conclusion was offered by Bridgeman and Shipman (1978). They found an increase in the variability of self-esteem scores between nursery school and grade 1,and between grade 1 and grade 3, which they interpreted as a reaction to patterns of success and

failure in school. It should be noted that the results of both the Kifer and the Bridgeman and Shipman study are open to alternative explanations. In the case of Kifer's study, the divergence of scores found on the personality measures in grades 4, 6, and 8 could be an artifact of the increasing stringency of the selection criterion. In the Bridgeman and Shipman study, the increasing variability of scores could be an artifact of maturation.

If can be seen that the relationship between affective characteristics and academic achievement is probably not unidirectional. Furthermore, a simple interaction model cannot do justice to the dynamics of the relationship (Bandura, 1978). Solutions to the problem, therefore, are not likely to be as simple as the results of isolated research studies might lead one to believe. Interventions designed to improve students' self-concept or achievement motivation, failure-free instructional programs, equal access to academic rewards, and/or non-graded classrooms do not seem to provide the answer. A possible key to solving the dilemma may be in the recognition that there is another class of variables that intervene between or moderate the relationship between student attributes and success and failure experiences.

By way of explanation, here is a paragraph from Self-Worth and School Learning by Covington and Beery (1976):

> One might assume at first glance that failure-avoiding tactics could be reversed by providing students with their fair share of successes. It makes sense, after all, that if a scarcity of success experiences is the original culprit, then providing compensatory rewards should set things right. Moreover, according

> to reinforcement theory, individuals ought to seek out success once they find how satisfying it can be. Yet, despite this logic, things do not always work out this way. Failure-avoiding students are largely unresponsive to success, something teachers know only too well. Indeed, such pupils seem almost calculating in their disregard for the success experiences that teachers carefully set up for them. Another puzzling observation is that failure, far from discouraging success-oriented students, actually appears to motivate them to greater effort! This also runs counter to a strict reinforcement view of learning, which predicts that failure ought to inhibit achievement. These apparent paradoxes are resolved when we realize that there are other important factors in learning beyond the sheer frequency and strength of rewards and punishments. There are also the person's beliefs about what cause his successes and failures. As is often true in psychology, the way a person perceives an event can be as important as the fact that it occurred in the first place. (p. 66)

The importance of an individual's perceptions about the world for determining such motivational constructs as aspiration, expectation, and feelings of self-worth is the central theme in recent cognitive psychological models of motivation.

Attribution Theory: Perceptions of Causality

Wiener (1976) identifies four possible causes used to interpret and predict the outcome of an achievement-related event: ability, effort, task difficulty, and luck. These causes can be displayed along two dimensions: an internal-external dimension usually referred to as locus of control, and a stable-unstable continuum. Ability and effort are both internal characteristics; task difficulty and luck are external. Ability and task difficulty are both stable characteristics; effort and luck are unstable. What this model predicts is that, for any success or for any failure experience, there are four possible causal attributions.

Each of these attributions is associated with a likely affective reaction and an expectation regarding future performance. Bar-Tel, (1975) in his review of attribution theory research, displays the eight possible attribution situations and their associated affective and cognitive reactions in the following fashion:

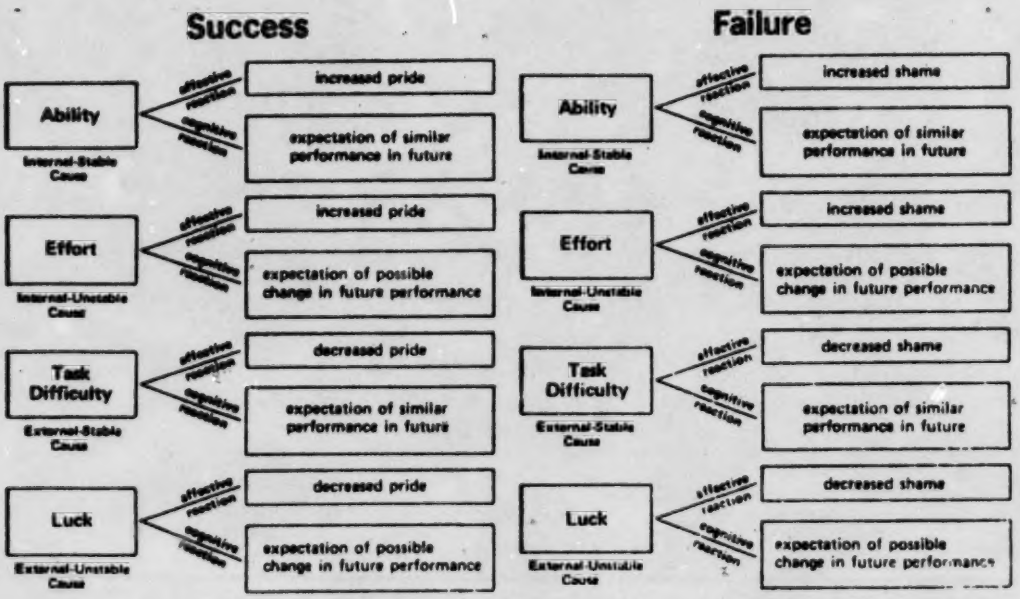

Figure 1. Affective and cognitive reactions in situations of success and failure as a function of causal attributions.

Causal attributions then act as a moderating variable between characteristics of students (attitudes, interests, abilities, need for achievement) and experiences of success and failure in school. Success-oriented students tend to attribute their successes to ability and effort and their failures to lack of ability. Failure-avoiding students tend to attribute their failures to a lack of ability. When successful, however, these students have a tendency to attribute this success to luck or to the easiness of the task (Covington & Beery, 1976).

With regard to achievement-striving, the model predicts the following sorts of individual difference patterns (Weiner, 1972, 1976):

1. Volitional undertaking. Persons high in achievement motivation (success-oriented students) should feel more pride in successful undertakings because of their internal attributions. This internalized reward system increases the likelihood that further achievement actions will be taken.

2. Persistence. Persons low in achievement needs who attribute failure to a lack of ability should perceive future goals as unattainable and be unwilling to persist.

3. Intensity. Students with high achievement needs should display greater effort in achievement-related contexts than students low in achievement needs.

4. Risk Preference. Students low in achievement needs should select overly easy or overly difficult tasks.

According to Bar-Tel (1975), there are important sex and race differences in attribution behavior which must be taken into account before a solution can be considered. Blacks, according to Bar-Tel, do not make effort attributions as readily as whites. Blacks have a tendency to attribute successes and failures to luck and features

of the task. Girls tend to differ from boys in being somewhat less willing to attribute success to high ability, but are more willing to see failure as caused by a lack of ability.

The consistent recommendation from these analyses is that the ability to profit from success and failure experiences depends on the disposition to attribute success to internal characteristics and to view lack of effort as the cause of failure. Bar-Tel (1975), Covington and Beery (1976), and Weiner (1972) all recommend that "programs be initiated to induce appropriate achievement-enhancing attributions in children" (Weiner, 1972).

Attribution Training

Weiner (1976) reports successful results for three studies which represent attempts to induce students to ascribe failure to a lack of effort rather than to low ability. In one study, the training resulted in a decrease in measured anxiety, improvement on the Primary Mental Abilities test, and greater ascription of failure to lack of effort. A second study combined attribution training with reinforcement procedures. An increase in effort attributions and an increase in persistence in the face of failure were the reported results. The third study mentioned by Weiner was conducted by Dweck (1975). Dweck observed that there are a significant number of elementary school children who do not perform the response necessary to succeed, even though they are motivated and quite capable of doing so. According to Dweck, these students, through a

combination of personal and environmental factors, have arrived at a state of "learned helplessness." They take less personal responsibility for their successes and failures, and when they do take responsibility, they attribute success to external factors and failure to a lack of ability. In short, helpless children see themselves as less instrumental in determining academic outcomes than their peers.

Dweck selected 12 students who were observed to show the most extreme symptoms of "learned helplessness" in a population of 750 students, ages 8-13. Ten comparison students were also selected from this population; these students matched the helpless students in ability, but were more persistent.

All students received four or five sheets containing 25-30 arithmetic problems in each experimental session. After students had completed each of every set of five problems, the experimenter recorded the times, graded the answers, and rewarded students with a token if they solved at least four of five problems correctly. Following a ten-day baseline period, problems were introduced which were beyond the ability of the students. These problems were introduced in pairs, so that students were effectively prevented from earning a token for that particular set of problems. Subjects were matched according to the degree to which the interpolation of failure disrupted their performance, and then these matched pairs were randomly assigned to either an Attribution Retraining (AR) or a Success Only (SO) condition. During the treatment period that followed, the SO students were given easy

problems that they could complete within the time limit. In the AR condition, the criterion number of problems necessary to receive a token was set above the students' typical pace on two or three of 15 trials that occurred in each session of this treatment period. AR students were coached during these failure trials to attribute failure to insufficient effort. For both groups these training sessions were interrupted after 13 days, and the interpolated failure sheets were reintroduced. Training continued for 12 more days, when the interpolated failure procedure was repeated again.

The results of the experiment were in line with the expectations of the study. By the end of training, all of the subjects in the AR training showed either neglible impairment or improvement in their rate of problem completion following interpolated failure trails. In the SO condition, students continued to show increased impairment following interpolated failure. In addition, the AR students showed a significantly greater mean percentage decrease in problems per minute between pretraining and posttraining as compared to the SO group, who continued to show about a 60 percent decrease throughout the experiment. According to Dweck, the SO students maintained their sensitivity to failure, but AR students were able to handle failure more adaptively.

One of Dweck's conclusions is consistent with the advice of Covington and Beery (1976) that an instructional program should not try to skirt the issue of failure by insuring error-free learning or by downplaying failure. Rather, errors should be capitalized on as opportunities to promote appropriate attribution behavior.

Achievement Motivation Training

The literature on training the motive for achievement is replete with approaches and techniques, which range from training teachers to introduce achievement motivation activities in the classroom to summer courses for students to special classroom kits to full-scale programs that completely restructure the educational environment (Alschuler, 1973; Covington & Beery, 1976; McClelland, 1973). According to McClelland, the greatest and most pervasive gains in achievement motivation and subsequent academic achievement seem to be associated with programs that include special training for teachers, restructured environments that are integrated with the total school environment, and a deliberate attempt to explain to students the meaning behind the training and restructuring.

Alschuler (1969) describes the goal of environmental restructuring characteristic of much of his research as having two fundamental features: (1) to shift the focus of decision making away from the teacher to the students; and (2) to shift the motivational structure from power to achievement. In a study conducted with two comparable tenth grade business education classes, Alschuler was able to boost the typing performance of one class so taht it no longer overlapped with the performance of the other. In the experimental class, the teacher and students negotiated the number of net words per minute (NW/M) that would earn different letter grades. In addition, all students kept daily records of their gains in typing speed, set long-term and short-term goals, and selected the length and difficulty

of tests on an individual basis. By the end of the third quarter, the restructured class averaged 54 percent NW/M more than the control class. In a similar study reported by Alschuler (1969), a fifth grade mathematics class, which was restructured to include perfo mance contracts, goal setting, and student-determined pacing, gained an average of 2.85 years on the Stanford Achievement Test. According to Alschuler, these same students with the same teacher working within the "traditional, power-oriented structure" gained by .27 years on the Stanford Achievement Test in the previous year.

According to McClelland's (1978) report on a study by deCharms (1976), low-achieving students who were taught to be "Origins" instead of "Pawns" (a training program which includes attribution training, skillful goal setting, and planfulness [Covington & Beery, 1976]) began to catch up with the achievement norms for their age group, while matched control classes dropped further and further behind. In a recent follow-up study involving these same students, deCharms (1978) found that, five year later, significantly more trained boys went on to graduate from high school than untrained boys. Moreover, for the boys in the experimental group, there was a large and significant difference between "trained" graduates and "trained" dropouts in the amount of pretest to posttest gain observed during "Origins" training five years earlier. Those who gained more from training had a higher probability of graduating from high school, according to deCharms.

McClelland laments the fact that no one seems to appreciate the

power and importance of studies such as those mentioned above. For McClelland, such results cast serious doubts on the assertion that compensatory education has failed. Moreoever, for no apparent reason, researchers refuse to abandon the belief that "knowing how to do something will motivate people to do it." For McClelland, it is the disposition to engage in achievement-related activities that is the fundamental individual difference variable in life. The failure of schools to deal specifically with such dispositions and their reliance on forced-choice measures of achievement constitute an irresponsible interpretation of the meaning of preparation for life.

Continued Motivation

As Maehr (1976) points out, there is a qualitative difference between motivation for learning as measured by immediate task performance, persistence behavior, and the tendency to return to an unfinished task (the Ziegarnik effect), and an individual's disposition to return to an instructional task at a different time in a different context without external pressures to do so and when other alternative pursuits are available. This latter index of motivation is referred to by Maehr as "continued motivation" and includes the spontaneous "homework" initiated by a young child as well as the inclination of adults to engage in continuing education.

According to Maehr, "it may well be that it is equally important, if not more so, for the school to foster the continued willingness of students to learn than it is to insure the fact that they have learned

some particular things at a certain point in time" (p. 444). In addition, Maehr points out that end-of-term achievement is no doubt affected by the degree to which students elect to reconfront school tasks outside the school context. Thus, defining reading competence according to a score on an achievement test fails to take into account that it is continued reading that defines a reader.

Maehr cites a study by Maehr and Stallings (1972) which provides evidence that continuing motivation may be directly affected by the nature of evaluation conditions in the classroom. In this study, an internal evaluation condition seemed to encourage a continuing interest in returning to work on difficult tasks as compared to a normative (external) evaluation condition. Maehr suggests that external evaluation procedures, though they may maintain or increase performance in the classroom, may do so at the expense of negative effects on continued motivation. Besides the importance of classroom evaluation procedures for determining the nature of students' motivation toward learning, Maehr, like the majority of researchers reported in this section, emphasizes the importance of instilling a sense of agency in students. For Maehr, the extent to which students see themselves as the cause of their own behavior may be the single most important determinant of continued motivation.

IV. CONCLUSIONS

Behavior Modification Procedures

A thorough analysis of the costs and benefits of using principles of behavior modification in the classroom is beyond the scope of this review. To the extent that changes in reinforcement contingencies can result in increased time-on-task, employment of those procedures would seem to be merited. However, a reliance on external rewards, especially when back-up reinforcers are required, is probably not an appropriate long-term procedure. Some provision for fading the use of external rewards would seem to be required. In addition, the work of Cobb and his associates, in its emphasis upon shaping minimal self-management skills rather than mere attentiveness, probably represents a more productive application of behavior modification principles. Attentiveness and compliance are probably less likely to become part of a student's repertoire and to be exhibited in the absence of the reinforcement system than are learned skills. In the final analysis, optimal academic achievement patterns depend on maximizing students' dispositions to engage in academic activities. External reward systems may be effective in inducing the will to learn on immediate tasks, but they have not been shown to be effective in leading to the sort of intrinsic motivation necessary to insure out-of-class learning.

Self-Control, Self-Management, and Self-Talk

As this review has revealed, self-control techniques are not only efficient and effective, but may have significant value for effecting the maintenance of achievement-related behaviors in the absence of environmental supports. In addition, there is some evidence that behaviors shaped through self-control procedures rather than through external control procedures are more resistant to extinction and transfer more readily to new situations (McLaughlin, 1976a, 1976b). There is less ambiguity regarding the relative advantage of self-control procedures as compared to environmental-control techniques for contributing to a sense of self-worth and personal effectiveness.

There would appear to be two general arguments regarding the appropriateness of self-control procedures for instruction in the basic skills areas. On the one hand, it can be argued that the extensive drill and practice required to learn the discriminations and concepts of early reading and computation are best provided by a teacher skilled in holding a group's attention and maintaining a rapid pace. On the other hand, self-control and self-management procedures have been employed successfully with students as young as nursery school age. Postponing the advent of these procedures to the upper elementary grades and using them selectively for one achievement area and not another are possible solutions. However, it may well be easier to promote the skills and dispositions necessary for self-regulated learning, if self-control is "the name of the game" from the

beginning. Furthermore, the evidence suggests that the debilitating pattern of failure-induced changes in feelings of self-worth begins as early as grade 1. Some provisions for changing this pattern, be they self-control procedures or changes in the reward structure, would seem to be required in the early primary period.

The success of such programs as the Direct Instruction Follow Through Model for raising the achievement level of disadvantaged students and the familiar observation that disadvantaged children come to school with low levels of the dispositions and skills referred to as survival skills (Hops & Cobb, 1973) or work skills (Resnick & Robinson, 1975), seem to suggest that self-management procedures are especially inappropriate for these students in the early grades. However, in light of the research reported in the previous sections, this suggestion must be regarded as an empirical question rather than a self-evident conclusion. As suggested by Resnick and Robinson's analysis, the absence of a sense of control and the increasing expectation of failure characteristic of disadvantaged students is at least as debilitating for learning as is the absence of work skills. Resnick and Robinson suggest that social reinforcement procedures be used initially to shape these students' attention and work behaviors. As students begin to experience success and begin to view those successes as related to their own efforts, the locus of reinforcement and control should be shifted to the student.

A successful learner-managed curriculum is certainly not as easy

to construct as the studies reported above lead one to believe. Among the support structures required are trained teachers willing to give up some of their authority, a highly structured curriculum, some provision for individualization, clear standards and procedures, and some system for rewarding individual effort (see Wang's five assumptions reported above). In addition, it is likely that the effects of a self-management system would be limited if it represented only a small part of a student's day, or if it was followed in subsequent years by a system of teacher control and management.

From the teacher's point of view, the employment of a learner-managed instructional system should have some important advantages compared to a teacher-controlled system. Given a well-designed structure and unambiguous rules, not only should the teacher have more time to devote to teaching and consultation, but the transfer of responsibility for controlling behavior to the student should serve to reduce a teacher's feeling of responsibility for everything that happens or fails to happen in the classroom. From both a logistical and an emotional point of view, it is far easier to coach than it is to direct.

Motivation and Achievement

According to the theory and evidence reviewed here, it is unproductive to view motivational and motivation-related characteristics as attributes of learners. It is even inappropriate to analyze the relationship of motivation to achievement in the framwork of aptitude-treatment interactions. Instead, a more productive approach begins with a cognitive psychological analysis of motivational characteristics. Motivation is seen as a state rather than a trait. What drives an individual to seek out or avoid learning activities is the learner's perception of himself/herself (self-regard, self-concept), his/her perception of the value associated with the successful completion of the task (the nature of the reward and its incentive value), and his/her perception of the extent to which effort will result in achieving success (a perception affected by specific capabilities, the nature of the task, and the learner's general disposition toward attribution).

Attempts to foster academic achievement by trying to heighten a student's motivation to learn have typically centered on one or another of the variables mentioned above: self-concept, rewards and incentives, abilities, task difficulty, and attribution. What may be required for what Covington and Beery (1976) call a "success-oriented learning structure" are interventions that include concomitant attention to these variables.

Implications

This paper began with a statement of concern regarding the back-to-basics movement. It was suggested that a combination of conservatism and evidence from large-scale correlational studies might lead to an endorsement of a "traditional practices" approach to instruction. It was further alleged that such a traditional practices approach might be characterized by at least the following features: teacher-imposed classroom control, a heightened concern for classroom discipline, teacher-imposed structure for learning activities, teacher-centered instruction, large-group instruction, and a focus on instructional strategies such as drill and practice intended to maintain maximum academically engaged time. Likewise, the traditional practices approach might be characterized by a lessening of at least the following policies and practices: a permissive attitude toward student behavior, small-group instruction, independent study, and student-selected activities.

It appears that evidence from recent research on self-management and motivation presents some important qualifications for the view that an effective back-to-basics movement requires a return to traditional teacher-centered structure and control and an end to permissive practices. Two general conclusions seem to form the basis for these qualifications:

1. Provided that systematic procedures are followed for its implementation and a structured curriculum is provided for its maintenance, student-managed instruction has some important advantages over teacher-imposed control of instruction. These

advantages include a more effective and individualized control of achievement-related and achievement-disrupting behaviors, a heightened sense of personal agency, and the possibility of a continued motivation to engage in learning activities.

2. To the extent that teacher-centered, teacher-controlled classrooms are characterized by external rewards, norm-referenced achievement standards, competitiveness, uniform goals, and an emphasis on achievement rather than effort, the result may be a cumulative depression of the affective and motivational prerequisites for academic achievement, at least for some students. Environments that allow students to set their own standards, stress intra-student rather than inter-student competiveness, emphasize the relationship between effort and achievement, and promote the use of student-generated incentives seem not only to produce the greatest short- and long-term achievement gains, but are also associated with a heightened sense of personal effectiveness among students.

The history of educational literature is replete with inappropriate choices and dichotomies: grading vs. nongrading, structured activities vs. unstructured ones, tests vs. no tests, teacher control vs. permissiveness. Less attention seems to be paid to variants of grading, testing, control, and structure. As Soar (1976) has noted, from the point of view of time spent directly engaged in learning, it does not matter how the structure and control are provided. But from the point of view of fostering a will to learn and a sense of personal effectiveness, it appears to make a substantial difference.

The research reported above, then, can be used to provide at least partial support for the preservation and strengthening of certain instructional practices, while providing evidence for the institution of other less common practices. Practices whose preservation is endorsed by this research include:

- Strict control of student on-task behavior;
- Maximum structure for learning activities;
- Clear and overt standards for student behavior and student achievement;
- Explicit definitions of the role of teacher and student;
- The use of tests to provide information to students regarding their performance (their errors as well as their successes).

Practices that might well be changed or introduced include:

- The use of behavior modification procedures to correct serious problems of disruptive and off-task behavior and to initiate the formation of management and learning strategies.
- The use of self-control techniques to shape on-task behavior and to eliminate off-task behavior.
- The introduction of a self-management system to teach and maintain self-regulated learning behaviors: goal setting, planning, study behavior, and learner selection and completion of instructional material.
- The use of contracts, "apprenticeship instruction," individualized instruction, self-talk instruction, and attribution training to supplement self-management procedures.
- Alterations in the classroom reward and achievement structure, such as criterion-referenced tests (Lipe & Jung, 1971; Resnick & Robinson, 1975), and individualized goal setting, self-evaluation, and self-grading (Covington & Beery, 1976).

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